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ABSTRACT

A study was conducted to explore the use of microcomputers in elementary and secondary schools by learning disabled students currently attending a community college in California. Learning disabilities specialists at each community college were asked to identify one currently enrolled student who had used microcomputers in any of the lower grade levels. Completed questionnaires were obtained from 18 of the 106 colleges. Study findings included the following: (1) the average age of the students was 22, with a range from 18 to 40 years of age; (2) the majority of the students had used microcomputers in senior high school; (3) microcomputers were used primarily in regular classes as opposed to in special education programs; (4) 10 of the students had had microcomputers at home while attending high school and college, with Apple microcomputers being the most popular choice; (5) 17 of the students worked independently on microcomputers; and (6) 14 of the students indicated that their prior experience with microcomputers had been "somewhat" or "very helpful" to them in their college classes. The survey instrument is appended. (EJV)

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Learning Disabled Student Use of Microcomputers in Learning Disabilities Programs at California Community Colleges

by

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June 12, 1987

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This study was a modest attempt to follow up on a larger research effort at UCSB, conducted at the Special Education Department in the School of Education. The larger research effort has been looking at the effects of the use of microcomputers with learning disabled students at the elementary, junior and senior high school levels in certain California school districts. A student survey for this study was sent to the Learning Disabilities Specialists at the 106 California Community Colleges. They were requested to identify one student each who was actively enrolled in their programs and who had used microcomputers in any of the lower grade levels. (K-12).

Eighteen colleges were successful in identifying students, having them complete the survey, and having the students return the completed survey to UCSB. This is a very low response rate of only 17%. However, it was discovered after the survey was sent that 16 of the colleges do not have Learning Disabilities Programs. Many of the other 90 colleges returned the student surveys uncompleted explaining that they could not find any LD students that had used microcomputers in the lower grades. Nevertheless, these eighteen students appear to be geographically representative of California. Eight were from northern colleges, and five each from central and southern California colleges. Two maps in the appendix of this report indicate the districts and colleges of the participating students. Six of the students attend colleges that have small size LD programs, another six hail from colleges with medium size programs and three come from colleges with large LD programs. Three students come from two colleges that did not respond to this question and a third college that did not return a college questionnaire.

The results of this survey will be reported in four basic parts. The first part will look at some of the general characteristics of the student

respondents. The second part will look at the students' elementary, secondary and home use of microcomputers. The third part will describe individual student use of microcomputers. The final section will detail some aspects of how teachers in the elementary and secondary levels used microcomputers with these students.

The average age of these students was 22, with a range from 18-40 years of age. Five of the students were age 20 or 28% of the respondents and four of the students were 22 years of age or 22% of the total group. Eighty-eight percent or 16 of the respondents were 18 to 22 years of age and 12% or 2 were 36 and 40 years of age. The gender of the group was equally split with 9 females and 9 males. The majority of the students (15 or 83%) were white, two were black or 11% and one or 6% was Filipino/American. Therefore, the students from the minority groups only comprised 17% of all the student respondents. All students except 2 reported using microcomputers at elementary, Junior High and Senior High schools, although not all of them utilized microcomputers at all three levels. Seven students used microcomputers in the elementary grades. The range of use was from the first through the seventh grade with the average grade of use being the fourth. Two students used microcomputers within special education, four in regular education, and one student did not respond to this question. At the Junior High School level six of the students used microcomputers, ranging from the 6th to the 9th grade. The eighth grade was the average grade of microcomputer use. One student used them in special education and five through regular education classes. The majority of the students (15) used microcomputers in Senior High, ranging from the ninth to the twelfth grade, with the average use being done in the eleventh grade. Within special education five students used microcomputers and nine did so within regular education, while one student did

not respond to the question.

None of the students reported owning their own microcomputer while attending elementary school, and only five students owned some in Junior High school. Ten students claimed that they had microcomputers at home when they attended senior high school and the community college. One student reported owning three different types of microcomputers while attending Junior and Senior High school and the community college. The Apple microcomputer appears to be the most popular choice of these students for their own personal use.

Four questions in the survey were designed to determine how useful microcomputers were to the individual students. The first question asked the students if they were able to work on the microcomputer by themselves. Seventeen or 94% of the students stated that they could work independently on the microcomputer. When further probed as to how much of this they could do, the majority (12 or 67%) responded with "much" and "very much." The students were then asked: What is your attitude toward microcomputers? Again, the majority (15 or 83%) stated that their attitudes were "somewhat" or "very positive" towards microcomputers. The students were also asked if their prior experience with microcomputers had helped them in their Learning Disabilities college classes that used microcomputers. The majority (11 or 61%) answered that their prior experience had been "somewhat" and "very helpful" in their LD college classes. A similar question, asked the students if this prior experience wiuth microcomputers had helped them with <u>any</u> of their college classes. This time a larger majority (14 or 77.7%) of the students reported that their prior experience had been "somewhat" or "very helpful" to them. When the responses of these last two questions are compared by gender, it is found that prior experience is slightly more helpful for males than females in the LD college classes. Conversely, it appears that this same prior

experience is more helpful for females than males in any of their college classes. The responses to these last two questions were also compared by private ownership of microcomputers at the community college level. For both questions it was found that a large number and percentage of those students who stated that their prior experience had been helpful to them in their LD and college courses also owned their own microcomputers in college. In other words, 90% or 9 students that felt that prior experience with microcomputers helped them in college LD classes also owned microcomputers in college and 33% or 2 students were nonowners. Similarly, 90% or 10 students that reported their prior experience with microcomputers helped them in any of their college classes, also owned microcomputers in college. In contrast 66% or 4 students were nonowners of microcomputers in college.

Some of the ways in which primary and secondary grade teachers used microcomputers with these students was attempted to be captured through the design of six survey questions. The students were asked if their elementary school teachers used microcomputers with five distinct instructional methods. The seven students who indicated that they had used microcomputers in elementary schools responded to this question. Three or 43% stated that none of these methods had been used with them. Four or 57% recorded that three or less of these methods had been used with each of them. The following instructional methods were given as possible responses:

(a) Repeated practice in Math and other subjects.

(b) Instruction in basic skills in math and English.

(c) Instruction in academic subjects like physical and social science.

(d) Use in word processing.

(e) Problem-solving with simulations or games.

One student indicated that methods a, b, and e were used, one student b and e,

one student b and another chose d. Method c was not chosen by any of the students. It appears somewhat significant that at least half of those students using microcomputers in the elementary grades could recall that their teachers used microcomputers with some formal instructional method. Microcomputers were used the most with instruction in basic skills in math and English with the elementary teacher of these students.

The students were then asked if their junior and senior high school teachers used microcomputers with any of the same above mentioned instructional methods. Six students used microcomputers at the Junior and Senior high schools and none only at the Senior High school. Four or 27% were not subject to any of these methods or they did not know if they had been. Eleven or 73% had been exposed to four or less of these methods. The secondary school teachers of these students used microcomputers most often with word processing, and least often with instruction in academic subjects like physical and social science.

The seven students who used microcomputers in elementary schools were asked if their teachers used microcomputers to teach them to:

(a) Learn to make the best decisions?

(b) Talk about an idea or discovery in the lesson?

Four or 57% stated that neither method was used by their teachers. However, 3 or 43% did note that their instructors used method B. This same question was asked of the 15 students using microcomputers at the secondary schools. Five students declared neither method was used and another three claimed that this question did not apply to them. These two groups consisted of 8 or 53% of the students. Seven other students or almost half at 47% indicated that their instructors used Method a or b or both.

The last two survey questions dealt with the type of instructional

setting that the students' primary and secondary techers used with microcomputers. It appears that the predominant settings used by both primary and secondary teachers was in small groups and with individual students as well as in large regular classes or both of these settings. For those students using microcomputers in the elementary schools 6 or 86% of the students had teachers who used these settings. Among the 15 students using microcomputers in the secondary school, 9 or 60% of these students also had teachers using these settings.

In summary, the following are major findings that can be attributed to the eighteen California Community College learning disabled students who responded to the survey for this study:

1. The majority of students used microcomputers at the Senior High level.
2. Most of the microcomputer use was done in regular education classes as opposed to special education.
3. Students with home ownership of microcomputers most often chose Apple microcomputers.
4. The overwhelming majority of these students could work independently on microcomputers.
5. Over four-fifths of the students had positive attitudes toward microcomputers.
6. Over half of the students felt that their prior experience with microcomputers was helpful in their learning disabilities college classes that used microcomputers.
7. Over 75% of the students also felt that their prior experience with microcomputers was helpful with any of their college classes.

8. Elementary teachers of these students used microcomputers the most with instruction in basic skills in math and English.
9. Secondary teachers of these students used microcomputers the most with instruction in word processing.
10. The predominant instructional classroom settings used by both primary and secondary teachers with microcomputers was in small groups and with individual students, as well as in large regular classes.

CALIFORNIA COMMUNITY COLLEGE DISTRICTS

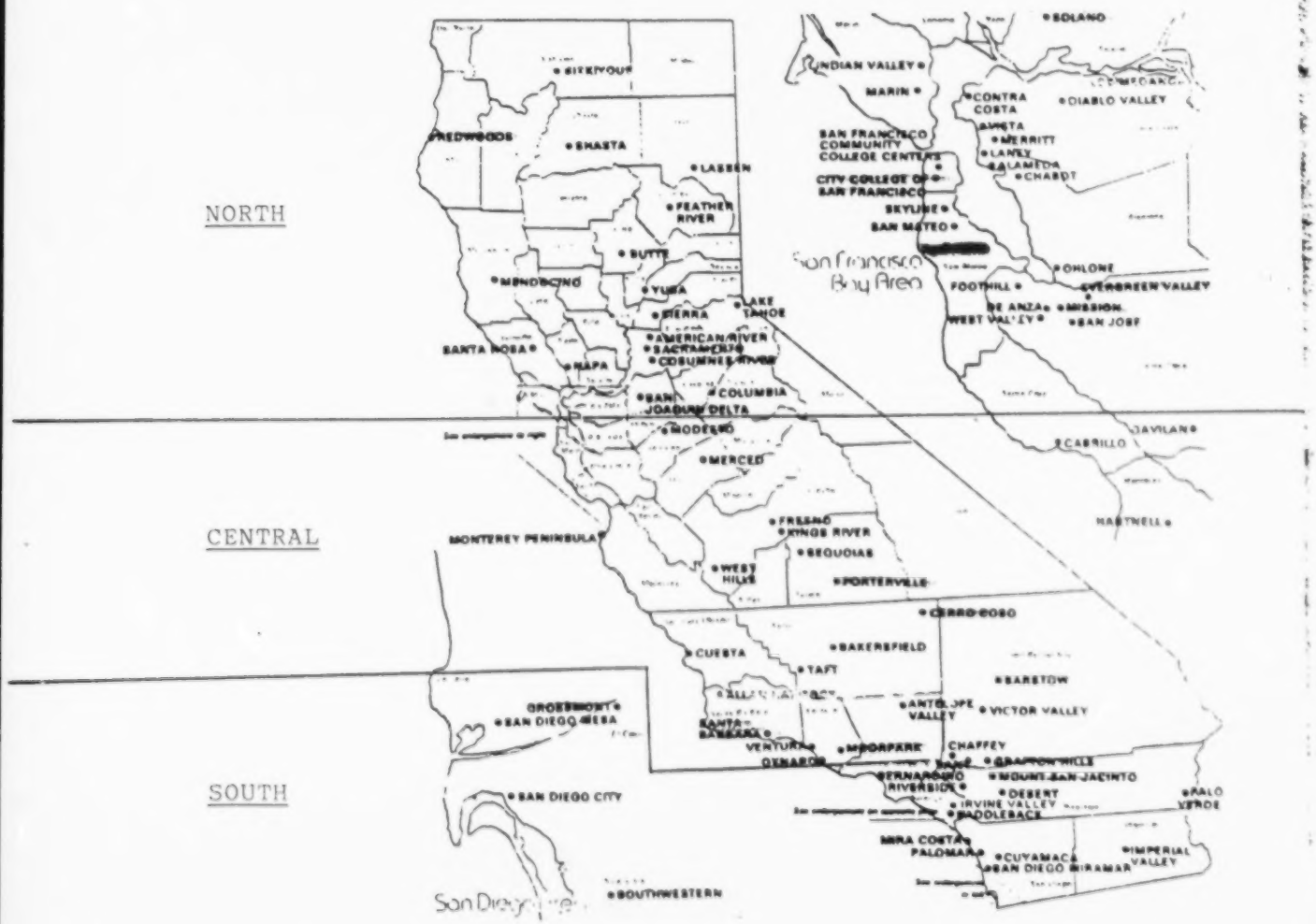
WITH STUDENTS RESPONDING TO THE MICROCOMPUTER USE SURVEY*

* (Shaded Areas)

CALIFORNIA COMMUNITY COLLEGES

WITH STUDENTS RESPONDING TO THE MICROCOMPUTER USE SURVEY*

* (Shaded Areas)



CENTRAL

SOUTH

Greater Los Angeles Area

CALIFORNIA COMMUNITY COLLEGES, LEARNING DISABILITIES PROGRAMS
MICROCOMPUTER USE STUDENT SURVEY

This survey is conducted by Dr. Gilbert Robledo, Coordinator, Disabled Student Services, Santa Barbara City College. It is a 1987 Spring sabbatical research project conducted at the Special Education Department, Graduate School of Education, at the University of California, Santa Barbara. This survey is confidential and the purpose is to attempt a modest follow up on a larger research effort at UCSB. The larger research effort has been looking at the effects of the use of microcomputers with learning disabled students at the elementary, junior high and senior high school levels in certain California school districts. If you used microcomputers in elementary, junior high or senior high school, please take a few minutes to fill out this survey.

range = 18-40

1. Your AGE: ave=22 Your SEX: FEMALE 9 MALE 9

2. Ethnic Group Status:

ASIAN ____ BLACK 2 HISPANIC ____ WHITE 15 PHILIPPINO 1 OTHER ____

3. COLLEGE NAME (Attending Spring, 1987): Colleges=18 Districts=17

4. SCHOOLS WHERE YOU USED MICROCOMPUTERS:

	NAME	CITY/STATE	GRADE LEVEL Range	GRADE LEVEL Ave.	SPECIAL EDUCATION	REGULAR EDUCATION	NR
a. ELEMENTARY	7		1-7	4th	2	4	1
b. JUNIOR HIGH	6		6-9	8th	1	5	1
c. SENIOR HIGH	15		9-12	11th	5	9	1

5. Did you ever have your own microcomputer at home while attending:

	NR	NO	YES	BRAND * Apple	IBM	Commodore	Other
a. ELEMENTARY SCHOOL	5	13	--				
b. JUNIOR HIGH SCHOOL	4	9	5	2	1	1	3
c. SENIOR HIGH SCHOOL	2	6	10	6	2		4
d. COMMUNITY COLLEGE	2	6	10	6	2	1	3

* One student owned IBM, Apple, Samsung, while attending Junior high, Senior high, and community college

6. Can you work on the microcomputer by yourself?

%	#	
6	1	No
94	17	Yes. If yes: how much?
39	7	a. Very much
28	5	b. Much
11	2	c. Medium
11	2	d. Some
	0	e. Very little
11	2	NR
100	18	TOTAL

7. What is your attitude toward microcomputers?

%	#	
61	11	a. Very positive
22	4	b. Somewhat positive
11	2	c. Neither positive nor negative
		d. Somewhat negative
		e. Very negative
6	1	NR
100		

8. Has your prior experience with microcomputers helped you in learning disabilities college classes that use microcomputers?

5.6	1	NR
38.9	7	a. Very helpful
22.2	4	b. Somewhat helpful
11.1	2	c. Neither helpful nor harmful
		d. Somewhat harmful
		e. Very harmful
22.2	4	f. Does not apply to me
100	18	TOTAL

9. Has your prior experience with microcomputers helped you with any of your college classes?

5.6	1	NR
50.0	9	a. Very helpful
27.7	5	b. Somewhat helpful
11.1	2	c. Neither helpful nor harmful
		d. Somewhat harmful
		e. Very harmful
5.6	1	f. Does not apply to me
100	18	TOTAL

10. Did your elementary school teachers use microcomputers for:

	0	a. Repeated practice in math and other subjects?
5.55	1	b. Instruction in basic skills in math and English?
	0	c. Instruction in academic subjects like physical and social science?
5.55	1	d. Use in word processing?
	0	e. Problem-solving with simulations or games?
16.66	3	f. None of the above.
5.55	1	g. I don't know.
50.00	9	h. Does not apply to me.

	#	%
a,b,e	1	5.55
b,e	1	5.55
NR	1	5.55
TOTAL	18	99.96

11. Did your junior and senior high school teachers use microcomputers for:

5.55	1	NR
5.55	1	a. Repeated practice in math and other subjects?
5.55	1	b. Instruction in basic skills in math and English?
	0	c. Instruction in academic subjects like physical and social science?
5.55	1	d. Use in word processing?
	0	e. Problem-solving with simulations or games?
5.55	1	f. None of the above.
16.66	3	g. I don't know.
11.11	2	h. Does not apply to me.

	#	%
a,d	3	16.66
b,d	1	5.55
b,d,e	1	5.55
c,d,e	1	5.55
a,b,c,e	1	5.55
TOTAL	18	99.93

12. Did your elementary school teachers use microcomputers to teach you to:

5.6	1	NR
	0	a. Learn to make the best decisions?
16.6	3	b. Talk about an idea or discovery in the lesson?
27.8	5	c. Neither.
5.6	1	d. I don't know.
44.4	8	e. Does not apply to me.
100	18	TOTAL

13. Did your junior and senior high school teachers use microcomputers to teach you to:

%	#		
5.6	1	a.	Learn to make the best decisions?
22.2	4	b.	Talk about an idea or discovery in the lesson?
27.8	5	c.	Neither.
		d.	I don't know.
33.3	6	e.	Does not apply to me.

	#	%
a,b	2	11.1
TOTAL	18	100

14. Did your elementary school teachers use microcomputers:

16.6	3	a.	In small groups (six or less) and also with individual students?
11.1	2	b.	In large regular classes?
5.6	1	c.	Both of the above.
5.6	1	d.	With individual students only?
	0	e.	In small groups only? (six or less students)
	0	f.	I don't know.
61.1	11	g.	Does not apply to me.
100	18		TOTAL

15. Did your junior and senior high school teachers use microcomputers:

	0	a.	In small groups (six or less) and also with individual students?
11.1	2	b.	In large regular classes?
38.9	7	c.	Both of the above.
11.1	2	d.	With individual students only?
11.1	2	e.	In small groups only? (six or less students)
	0	f.	I don't know.
22.2	4	g.	Does not apply to me.

	#	%
a,b	1	5.6
TOTAL	18	100

Thank you very much for taking the time to complete this survey. Hopefully, the results from this statewide survey will add to the overall effort of improving instruction to students with learning disabilities at all levels of California education.

Please return the survey in the enclosed self-addressed and stamped envelope.

Please complete the information below if your wish to have the results of the survey sent to you.

NAME _____

ADDRESS _____
Number & Street City Zip Code

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